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CUBICITY OF LINEAR COMBINATIONS OF TWO COMMUTING CUBIC MATRICES

E.KIŞI AND H. ÖZDEMİR

ABSTRACT

Let A_1 and A_2 be commuting cubic matrices and let c_1 and c_2 be non-zero complex numbers. Necessary and sufficient conditions for the cubicity of the linear combinations of the form $A = c_1A_1 + c_2A_2$ are obtained. The results obtained could be view as a generalization of the results given for the linear combinations of tripotent matrices in [1] and an expanding of the results given for the linear combinations of quadratic matrices in [2].

REFERENCES

- [1] J.K. Baksalary, O.M. Baksalary, H. Özdemir, A note on linear combinations of commuting tripotent matrices, *Linear Algebra Appl.* 388 45-51 (2004).
- [2] M. Uç, H. Özdemir, A.Y. Özban, On the quadraticity of linear combinations of quadratic matrices, *Linear and Multilinear Algebra* 63 1125-1137 (2015).

(author one) DEPARTMENT OF MATHEMATICS, SAKARYA UNIVERSITY, SAKARYA TR54187, TURKEY
E-mail address, author one: ekisi@sakarya.edu.tr

(author two) DEPARTMENT OF MATHEMATICS, SAKARYA UNIVERSITY, SAKARYA TR54187, TURKEY
E-mail address, author two: hozdemir@sakarya.edu.tr

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